Nitrogen in Office of Water Programs

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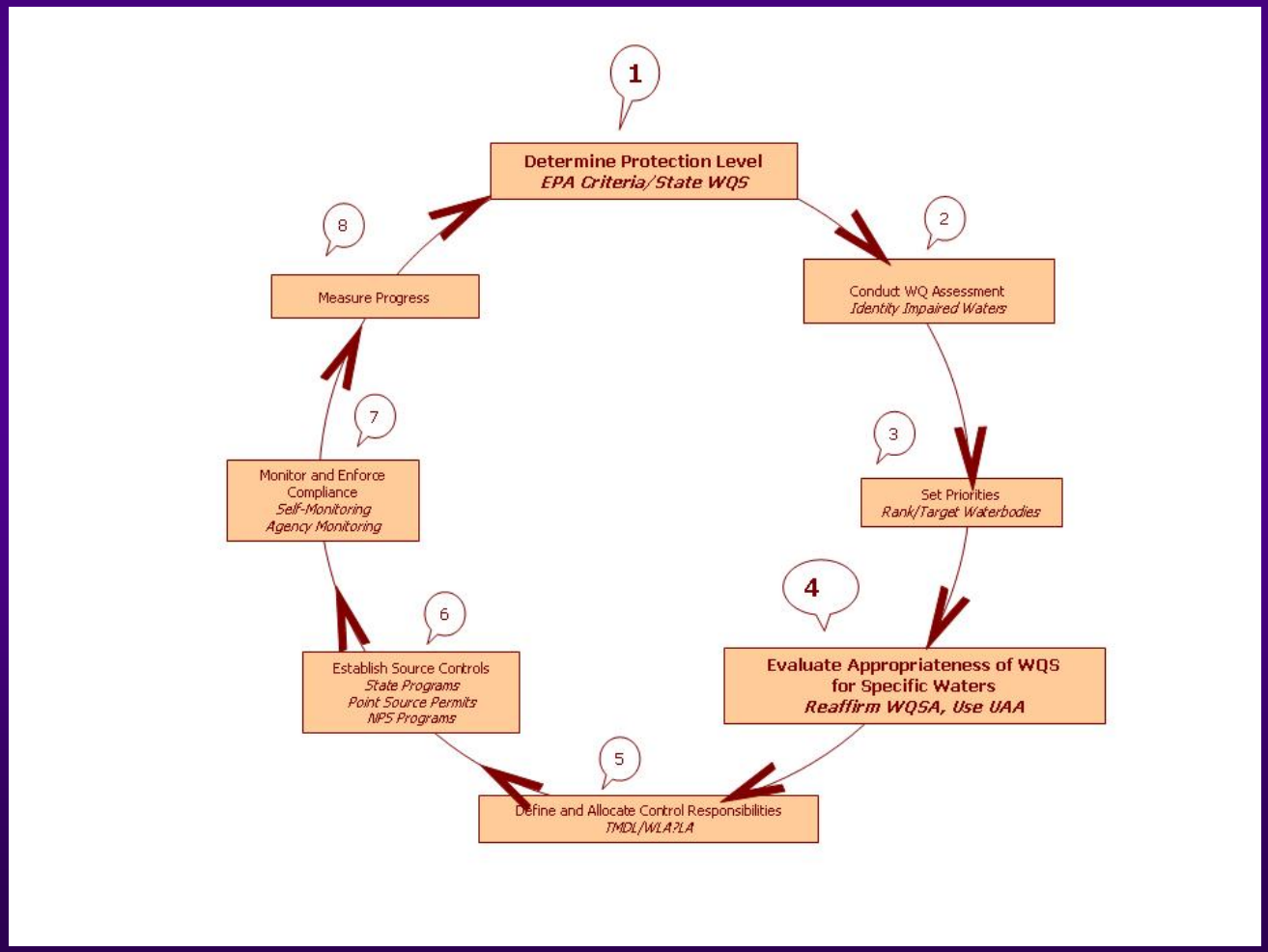
What is the Office of Water's Mission?

- EPA's program office for water protection
- Two primary enabling statutes:
  - Clean Water Act
    - Ecological Protection
    - Human Health Protection
  - Safe Drinking Water Act
    - Human Health Protection

What is the Surface Water Protection Program?



Programs

1 WQS/WQS

2 Assessment

3 TMDL

4 WQS

5 TMDL

6 NPDES

7 Enforcement

8 Monitoring

How Does the Criteria Program Address Nitrogen?

- Develop National Criteria Methodologies
  - Statutory requirement to publish criteria from time to time
  - Guidance documents published 1999-2001 for rivers/streams, lakes/reservoirs, estuaries/coastal
  - Draft guidance for wetlands published 2006
  - Recommend criteria for TN, TP, Chlorophyll a, transparency based on ecoregional analysis of reference waters
  - Challenge: How to develop criteria other than by a reference water approach

- Publish Recommended National Criteria
  - Published in 2002 for lakes/reservoirs and rivers/streams using ecoregional analysis

How Does the Standards Program Address Nitrogen?

- Approve or Disapprove State Standards
  - Statutory requirement to approve or disapprove/promulgate State standards
  - Review nitrogen criteria for scientific defensibility to protect "designated uses"
  - Review standards for protection downstream State standards
  - Current status: 6 states/territories have updated their standards for nutrients since 2001
  - Challenges:
    - What if downstream effect is far away, e.g., Gulf of Mexico
    - How to ascertain nitrogen effects on waters local to State

How Does the Assessment Program Address Nitrogen?

- Determine if Waters Achieve Standards
  - Statutory requirement to approve or disapprove State list of waters that do not achieve standards (impaired waters)
  - Review monitoring and modeling studies for technical merits
  - Challenges:
    - What is sufficient enough data for determining nitrogen impairment
    - What if data show no impairment for chlorophyll but impairment for nitrogen

How Does the TMDL Program Address Nitrogen?

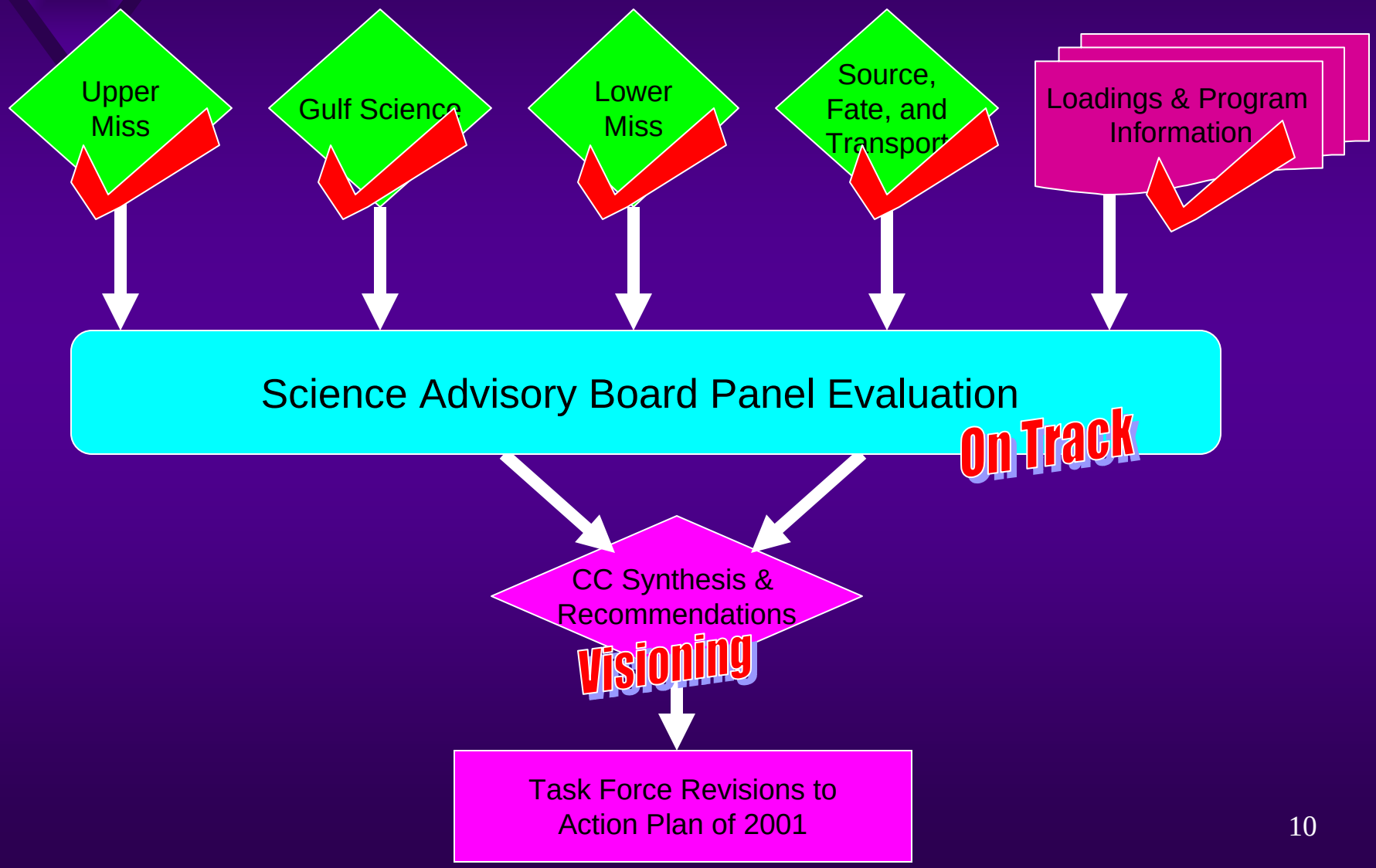
- Determine Maximum Load That Achieves Standards
  - Statutory requirement to approve or disapprove State TMDLs that do not achieve standards
  - Sum of loads from point and nonpoint sources, including natural sources
  - Most often involves modeling relationships between loads (TN & TP) and effects (chlorophyll and transparency)
  - Challenges:
    - How far downstream to set TMDL study scope
    - How to quantify nonpoint sources

How Does the NPDES Program Address Nitrogen?

- Statutory requirement prohibits discharge without permit
  - Most States issue permits; EPA issues if States not authorized.
  - EPA "may" review State permits but is not required to do so.
- Determine Technology-based Effluent Limits
  - Technology based on review of existing treatment information for industries
  - Technology for POTWs (municipalities) is "secondary treatment", which does not involve TN or TP removal
- Determine Water Quality-based Effluent Limits (WQBELs)
  - Based on maximum load that does not exceed standards
  - Applies equally both industries and POTWs
  - Challenge: How to determine WQBELs in absence of a TMDL

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

- 9 Federal Agencies (EPA, NOAA, USDA, USACE, USGS, FWS, CEQ, DOJ, OSTP)
- 10 States represented by Agriculture and Environment Departments (Ag: Arkansas, Illinois, Iowa, Tennessee. Env: Louisiana, Minnesota, Mississippi, Missouri, Ohio, Wisconsin)

Mississippi River/Gulf of Mexico Watershed Nutrient Task Force

Reassessment Process